



**Australian Government**

# **Assessment Requirements for MSS025016 Perform sampling and testing of stationary emissions**

**Release: 1**

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## **Modification History**

Not applicable.

## **Performance Evidence**

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- planning and safely conducting stack sampling/testing to obtain reliable samples and data on at least two (2) occasions
- planning for field activities, including researching and summarising site history and operations, analysing existing emissions data and/or reports, and identifying gases of interest
- interpreting and applying relevant air quality regulatory requirements, stack sampling/monitoring plans, sampling/test methods and standards, and workplace procedures
- selecting sampling/analyser train configurations to suit type and likely concentration of particulate matter, plant/stack conditions and/or gases of interest, and client or workplace requirements, relevant standards and guidelines
- recognising hazards and assessing risks, interpreting and applying health and safety plans and safe work methods, including use of designated safety equipment and personal protective equipment (PPE)
- preparing for field activities, including arranging access to the site, stack and services; arranging induction and permits; conducting reconnaissance; reviewing safety requirements and securing the resources required; and scheduling stack sampling/testing
- communicating effectively with site personnel and negotiating access and support
- selecting and checking that all supplies, equipment and instruments are fit for purpose, and stowing/transporting them to and from the field
- collecting reliable samples in accordance with site sampling plan/methods and paying close attention to any pre-treatment, container, preservation, storage, labelling and traceability requirements
- operating, maintaining and/or calibrating stack sampling and testing equipment with close attention to each method step to obtain representative stack samples and produce consistently valid and accurate test results
- identifying and rectifying basic instrument faults
- accurately recording measurements, site features and environmental conditions, and any observations that may impact on validity/integrity of samples or test results
- calculating required quantities using appropriate units, precision, uncertainties and/or calibration graphs

- interpreting gross features/trends in data, identifying atypical results and/or comparing results with established air quality standards and/or statutory environmental quality concentration limits
- seeking advice when issues/problems are beyond scope of competence/responsibility
- maintaining, cleaning and decontaminating sampling, testing and/or PPE in accordance with workplace procedures
- writing/compiling concise and accurate reports in accordance with workplace procedures
- working safely and follow relevant legislative requirements for the disposal of waste and the preservation of the environment.

## Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- scientific terminology used in job role covering atmospheric science, sampling and testing of stationary source emissions
- overview of specific legislation, policies, standards and codes of practice related to air quality/pollution and monitoring of stationary source emissions
- properties of air pollutants, such as:
  - particulates (e.g. inorganics and organics, and metals)
  - inorganic gases (e.g. CO, CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, ammonia, acid rain and halogens)
  - volatile organics
- localised meteorology and dispersion of air pollutants
- ideal gas behaviour, principles of fluid flow through ducts, and effects of bends and orifices
- principles of stationary source emissions sampling (particles, common gases and compounds) and associated sampling equipment
- stack dimensions, source parameters and the selection of sampling planes, number and location of sampling points
- isokinetic conditions, and effect of fluctuations in source parameters on results
- principles of emission monitoring (particles and common gases) and associated analysers
- function of key components, operating principles of common stack sampling/analyser trains
- common procedure/equipment problems leading to atypical data/results
- common process problems leading to atypical test results (e.g. high oxygen readings may indicate a hole in the stack)
- labelling and traceability of samples and management of large volumes of data
- hazards, health, safety and environment requirements relevant to site activities undertaken, including safe work methods and equipment, requirements for safe work platforms and services, use of PPE and handling of waste.

## Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace, or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept in each case).
- Holistic assessment methods include:
  - inspection of stack samples collected by the candidate
  - review of stack measurements, test results, calculations and observations produced by the candidate
  - review of sampling/testing records and reports completed by the candidate
  - feedback from supervisor about the candidate's ability to apply workplace procedures and stack sampling/test methods consistently, work safely and produce results within the agreed timeframe
  - oral and/or written questions to assess the candidate's understanding of the principles of stack sampling/testing, safe operation of stack sampling equipment, set-up and use of test instruments/analysers and processing of data.
- Access is required to all instruments, equipment, materials, workplace documentation, procedures, and specifications associated with this unit including, but not limited to:
  - vehicles, stack sampling/test equipment, analysers, reagents, gases, safety equipment, camera and consumables
  - work program, workplace procedures, codes of practice, site maps, site sampling/testing plans and methods, safety procedures, standards and equipment manuals, logbooks, and data loggers and computers.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
  - relevant VET or other qualification/Statement of Attainment AND/OR
  - relevant workplace experience
- Currency can be demonstrated through:
  - performing the competency being assessed as part of current employment OR

- having consulted with an organisation providing environmental monitoring, management or technology related services about performing the competency being assessed within the last twelve months.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>